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introducing air to the combustion chamber, and at least one exhaust passage receiving exhaust gases from the combustion chamber, the number of air intake passages being greater than the number of exhaust passages, air intake valves arranged to selectively open and close the air intake passages, at least one exhaust valve arranged to open and close the at least one exhaust passage, an intake camshaft arranged to actuate the intake valves, an exhaust camshaft arranged to actuate the exhaust valve, the intake camshaft lying closer to the center plane than the exhaust camshaft, the crankshaft rotating about an axis that lies to one side of the center plane, and both the intake and exhaust camshafts rotate about axes that lie on the other side of the central plane.

COMMENTS

In response to the Office Action mailed October 31, 2001, Applicants respectfully request the Examiner to reconsider the above-captioned application in view of the foregoing amendments and the following comments. Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached pages are captioned **VERSION WITH MARKINGS TO SHOW CHANGE MADE**. The changes are indicated by underlining insertions (e.g., added text) and bracketing and bolding deletions (e.g., [deleted text]).

Applicants have amended some claims to advance prosecution of the present application. Applicants are not acquiescing to the rejection and Applicants reserve the right to pursue each of the amended claims in its unamended form in a continuation or another later filed related application.

Amendments To Claims Address Noted Informalities

Claim 1 has been rejected under 35 U.S.C. 112, second paragraph, as indefinite for failing to particularly point out and distinctly claim the subject matter. The foregoing amendments to Claim 1 correct informalities noted by the Examiner. Entry of the amendments is respectfully requested.

The Applied Combination of Nakase et al./Isaka Does Not Render Obvious The Engine Recited By Claims 1, 2 and 4-19

Claims 1-19 have been rejected as unpatentable over Nakase et al. in view of Isaka. Claim 3 has been canceled without prejudice or disclaimer. Applicants respectfully submit that

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the rest of the claims as amended overcome the rejection because the prior art references do not teach or suggest the recited layout of the engine in a watercraft.

Claims 1, 2 and 4-15

Nakase et al. discloses a four-cycle engine 23 that has an engine axis slanting from the center plane L of the watercraft 11. The crankshaft 24 of the engine 23 is generally disposed on the center plane L. Because of this arrangement, pivot axes of the pistons of the engine 23 at which the connecting rods 44 are rotatably coupled with the pistons always lie in one half of the hull 12 during the reciprocal travel of the pistons. Accordingly, all the heavy components including the camshafts 46, the pistons, the connecting rods 44 and the crankshaft 24 substantially exist on one half of the hull 12.

As the Examiner pointed out, Isaka discloses a five valve head, in which there are provided three intake valves and passages and two exhaust valves and passages.

The combination of Nakase et al. with Isaka does not teach or suggest, among other limitations recited by Claim 1, that a pivot axis of the piston (or pivot axes of the pistons) generally lies within the center plane during at least one point of reciprocal travel of the piston within the cylinder bore. Because of the arrangement, at least some of the heavy components including the crankshaft, the big end of the connecting rod and at least a portion of the piston lie on another side of the center plane opposing to the side on which at least the valves exist. The weight of the engine thus can be better balanced within the hull.

Thus, the applied prior art references do not teach or suggest all the limitations of Claim 1 as amended. Claims 2 and 4-15 depend from Claim 1. For at least this reason, not all of the limitations of Claims 2 and 4-15 are taught or suggested, and Claims 2 and 4-15 are not obvious over Nakase et al. in view of Isaka. Reconsideration of Claims 1, 2 and 4-15 is respectfully requested.

Claims 16-19

Claim 16 as amended recites the following limitations, among other: a crankshaft, a connecting rod pivotally connecting the crankshaft with the piston, the piston having a pivot axis at which the connecting rod is pivotally coupled with the piston, the pivot axis generally lying within the center plane during at least one point of reciprocal travel of the piston within the cylinder bore. As noted above, the prior art references that form the basis of the rejection do not teach or suggest all the limitations of Claim 16. Claims 17-19 depend from Claim 16. For at

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least this reason, not all of the limitations of Claims 17-19 are taught or suggested, and Claims 17-19 are not obvious over Nakase et al. in view of Isaka. Reconsideration of Claims 16-19 also is respectfully requested.

CONCLUSION

For the foregoing reasons, it is respectfully submitted that the rejections set forth in the outstanding Office Action are inapplicable to the present claims. Accordingly, early issuance of a Notice of Allowance is most earnestly solicited.

The undersigned has made a good faith effort to respond to all of the rejections raised in the Office Action so as to place the claims in condition for immediate allowance. Nevertheless, if any undeveloped issues remain or if any issues require clarification, the Examiner is respectfully requested to call Applicant's attorney, Bill Shreve at (949) 721-2895 (direct line) in order to resolve such issue promptly.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: April 30, 2002

By:



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VERSION WITH MARKINGS SHOWING CHANGES MADE

IN THE SPECIFICATION:

The paragraph starting at page 1, line 5 has been amended as follows:

The [invention] application is based on and claims priority to Japanese Patent Application[s] No. Hei 11-277919, filed September 30, 1999[, **the entire contents of which is hereby expressly incorporated by reference**].

IN THE CLAIMS:

Claims 1, 2 and 4-19 have been amended as follows:

1. (Amended) A watercraft comprising an [An] internal combustion engine [for a watercraft having] and a hull defining a center plane extending generally vertically from bow to stern, the internal combustion engine comprising a cylinder body defining at least one cylinder bore, an axis of the cylinder bore slanting from the center plane, a piston reciprocating within the cylinder bore, a crankshaft, a connecting rod pivotally connecting the crankshaft with the piston, the piston having a pivot axis at which the connecting rod is pivotally coupled with the piston, the pivot axis generally lying within the center plane during at least one point of reciprocal travel of the piston within the cylinder bore, a cylinder head member closing an end of the cylinder bore and defining a combustion chamber with the cylinder bore and the piston, a first [set] passage [of passages having] comprising at least two [passages] paths communicating with the combustion chamber, a first [set of valves] valve device comprising at least two valves arranged to selectively connect and disconnect the paths of the first [set of] passage[s] with the combustion chamber, a second [set of] passage [having] comprising at least one [second passage] path communicating with the combustion chamber, the number of paths of the second [set of] passage[s] being fewer in number than the number of paths of the first [set of] passage[s], and a second [set of valves] valve device comprising at least one valve arranged to selectively connect and disconnect the at least one [passage] path of the second [set of] passage[s] with the combustion chamber, the first [set of valves] valve device being disposed closer to the center plane than the second [set of valves] valve device.

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2. (Amended) The [internal combustion engine] watercraft as set forth in Claim 1, wherein both the first and second [set of valves] valve devices exist on the same side of the center plane within the hull.

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4. (Amended) The [internal combustion engine] watercraft as set forth in Claim [3] 1, wherein the piston reciprocates between [the] a top dead center position and [the] a bottom dead center, and the pivot axis generally [exists on] lies within the center plane when the piston is at the top dead center position.

5. (Amended) The [internal combustion engine] watercraft as set forth in Claim 1, wherein the second [set of valves includes] valve device comprises at least two valves.

6. (Amended) The [internal combustion engine] watercraft as set forth in Claim 5, wherein the first [set of valves has] valve device comprises three valves and the second [set of valves has] valve device comprises two valves.

7. (Amended) The [internal combustion engine] watercraft as set forth in Claim 1, wherein the [passages] paths of the first [set of] passage[s] are arranged to introduce [the] at least air to the combustion chamber and the at least one [passage] path of the second [set of] passage[s] is arranged to receive [the] exhaust gases from the combustion chamber.

8. (Amended) The [internal combustion engine] watercraft as set forth in Claim 1 additionally comprising at least one camshaft arranged to actuate at least some of the valves, and the camshaft extending generally in parallel to the center plane.

9. (Amended) The [internal combustion engine] watercraft as set forth in Claim 8, wherein the engine includes a first camshaft and a second camshaft, the first camshaft actuates at least the [first set of] valves of the first valve device, the second camshaft actuates at least the at least one valve of the second [set of valves] valve device, and the first camshaft lies closer to the center plane than does the second camshaft.

10. (Amended) The [internal combustion engine] watercraft as set forth in Claim 8, wherein the camshaft has cam lobes configured to push the [first and second] valves.

11. (Amended) The [internal combustion engine] watercraft as set forth in Claim 1, wherein at least a portion [one of the passages] of the first [set of] passage[s] extends across the center plane.

12. (Amended) The [internal combustion engine] watercraft as set forth in Claim 1, wherein the [passages of the] first [set unit passages are] passage is arranged to introduce the air into the combustion chamber.

13. (Amended) The [internal combustion engine] watercraft as set forth in Claim 1, wherein at least a portion of the cylinder bore extends across the center plane.

14. (Amended) The [internal combustion engine] watercraft as set forth in Claim 1, wherein the engine includes at least two cylinder bores, and the cylinder bores are spaced apart from each other along the center plane.

15. (Amended) The [internal combustion engine] watercraft as set forth in Claim 1 additionally including an ignition control system that operates on a four-stroke cycle combustion principle.

16. (Amended) A watercraft comprising an [An] internal combustion engine [for a watercraft having] and a hull defining a center plane extending generally vertically from bow to stern, the internal combustion engine comprising a cylinder body mounted within the hull, the cylinder body defining at least one cylinder bore, a piston reciprocating within the cylinder bore, a crankshaft, a connecting rod pivotally connecting the crankshaft with the piston, the piston having a pivot axis at which the connecting rod is pivotally coupled with the piston, the pivot axis generally lying within the center plane during at least one point of reciprocal travel of the piston within the cylinder bore, a cylinder head member closing an end of the cylinder bore and defining a combustion chamber with the cylinder bore and the piston, the cylinder head member slanting toward one side of the hull from the center plane, a plurality of air intake [passages] paths introducing air to the combustion chamber, and at least one exhaust [passage] path receiving exhaust gases from the combustion chamber, the number of air intake [passages] paths being greater than the number of the [at least one] exhaust [passage] paths, air intake valves arranged to selectively open and close the air intake [passages] paths, at least one exhaust valve arranged to open and close the at least one exhaust [passage] path, an intake camshaft arranged to actuate the intake valves, an exhaust camshaft arranged to actuate the exhaust valve, both the intake and exhaust camshafts extending generally in parallel to the center plane, and the intake camshaft lying closer to the center plane than the exhaust camshaft.

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17. (Amended) The [internal combustion engine] watercraft as set forth in Claim 16, wherein at least a portion of at least one of the air intake passages extend across the center plane.

18. (Amended) The [internal combustion engine] watercraft as set forth in Claim 16, wherein at least a portion of the cylinder bore extends across the center plane.

19. (Amended) The [internal combustion engine] watercraft as set forth in Claim 16, wherein both the intake and exhaust camshafts lie on the same side of the center plane within the hull.

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